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Proposal for the creation of a poverty-adaptation-mitigation funding window within the Green Climate Fund

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Key Words

International climate change negotiations, Green Climate Fund, poverty, mitigation, adaptation, basic needs

Abstract

The stakes for alleviating poverty and avoiding unbridled climate change are inextricably linked. Climate change impacts will slow down and may even reverse trends in poverty reduction. The pathways consistent with global warming of no more than 2°C require strategies for poverty alleviation to make allowance for the constraint of low-carbon development. Existing climate funds have failed to target poverty alleviation as a high-priority strategy for adaptation or as a component of low-carbon development. This article proposes a funding window as part of the Green Climate Fund in order to foster synergies targeting greater satisfaction of basic needs, while making allowance for adaptation and mitigation. This financial mechanism is based on indicators of the satisfaction of basic needs and could respond to the claims of the developing countries which see alleviating poverty as the first priority in the climate negotiations. It defines a country continuum, given that there are poor people everywhere; all developing countries are therefore eligible with a mechanism of this sort.

Policy relevance statement

The IPCC calls for substantial emissions reductions and adaptation strategies over the next decades to reduce the high risks of severe impacts of climate change over the 21st century. Industrialized countries and developing countries alike recognize the need to mitigate climate change and to adapt to it. But they face many challenges that lead to an “emissions gap” between an emissions level consistent with the 2° C increase limit and the voluntary pledges that they have made thus far in the climate negotiations (UNEP, 2014). In this arena, many developing countries underline that their first domestic priority is the satisfaction of basic needs. In the run-up to the next climate negotiations at COP 21 in Paris, the proposed Poverty-Adaptation-Mitigation-funding window could contribute to alleviate the conflict between development and climate goals in developing countries. In this sense, it could spur developing countries to integrate more ambitious emissions limitations pledges into their Intended Nationally Determined Contributions. This could in turn entice industrialized countries to act similarly. In the end, it could pave the way to an ambitious climate agreement in Paris at COP21.

Introduction

The year 2015 will see two major international events: negotiations to set new Sustainable Development Goals (SDGs) with the reaffirmed goal of ending extreme poverty, and the 21st International Conference on Climate Change (COP21). The coincidence of these two events recalls how poverty and climate change, two major challenges for the coming decades, are intertwined.

Despite substantial progress in reducing extreme poverty rates in developing regions over the last 20 years, from 47 % of the population in 1990 to 22 % in 2014, 1.2 billion people still live with less than \$1.25 a day : 400 million in India, 400 million in sub-Saharan Africa, 150 million in China (UNDP, 2014; UNECA et al., 2014). Poverty goes hand-in-hand with large-scale failures to satisfy several basic needs: 840 million people in the world suffer from hunger; 2.5 billion lack access to improved sanitation facilities; 863 million urban residents live in slums (UN-Habitat, 2013); worldwide, 2.7 billion people use biomass to cook their food, with devastating effects on their health (IEA, 2011); in sub-Saharan Africa, only 32% of the population has access to electricity (59% in towns and only 16% in rural areas); in India the figure is 75% (IEA, 2014).

Climate change is very likely to be a major hurdle to the eradication of poverty (Skoufias et al., 2011; Shepherd et al., 2013). Climate change will not only worsen the situation of the poor; it will also very likely reverse the trend of decreasing poverty (Hallegatte et al., 2014). Therefore, to limit overall climate change impacts and particularly on the poorest populations, global warming has to be limited to 2°C at most. This means, according to IPCC (IPCC, 2014), that the world's population must become carbon neutral by the end of the 21st century. Development strategies including poverty eradication will thus need to integrate mitigation strategies. However poverty alleviation usually induces an enlargement of basic needs which may lead to a very high growth in energy services and consumption: for example when people get access to modern energy, their energy consumption tends to rise rapidly above the very low, initial level (Wolfram et al., 2012; Gertler et al., 2011). It is thus important that pro-poor policies are designed in such a way as to be consistent with climate mitigation, which is possible according to Hallegatte et al. (2014).

In spite of these inextricable links between climate change and poverty, until the early - 2000s international forums generally addressed the two challenges separately. Policies and strategies to achieve the Millennium Development Goals focused mainly on 'development-first' actions (UN, 2005); international climate negotiations dealt with 'climate (mitigation) first' issues, even if many developing countries repeatedly pointed that other more urgent issues, including poverty eradication were on their agendas (Kasa et al, 2008 ; Rajamani, 2007)¹.

The intertwined issues of development and climate change gained considerable momentum by the mid-2000s. Following Beg et al. (2002), and Winkler et al. (2002), Bradley et al. (2005) further investigated Sustainable Development-Policies and measures (SD-PAMs), putting domestic development policies first while having a positive effect on GHG emissions. Similarly, Halsnæs and Garg (2006) suggested to build climate policies around development priorities and considered the potential contribution to mitigation by developing countries as a side-benefit of sustainable development.

The fourth IPCC assessment report reviewed the literature on 'the two-way nature of the relationship between climate change (mitigation) and sustainable development' (IPCC, 2007b, p. 695): actions limiting GHG emissions may generate development co-benefits, while well-tailored sustainable development strategies may contribute to climate mitigation.

A triangular relationship has even formed between climate change and sustainable development since the mid-2000s, with climate-change negotiations increasingly addressing concerns about adaptation as well as mitigation. The fourth IPCC assessment report emphasized the inter-relationship between climate adaptation and mitigation (IPCC, 2007a). Clapp et al. (2010) suggested low-emissions development strategies (LEDS) which integrate mitigation and/or climate-resilient policies. These LEDS were incorporated in the 2009 Copenhagen Accord and the 2010 Cancun Agreements (UNFCCC, 2009, 2010). Since COP 19 in Warsaw the scope of international negotiation has evolved in such a way that the Parties at COP 21 will negotiate on the basis of Intended Nationally Determined Contributions (UNFCCC, 2013). In this context national research teams of the Deep Decarbonization

¹ It is worth noting that, among the G77+China Group, the Small Island Developing States and the Least Developed Countries did not and still do not share this position as they are the countries most exposed to climate-change impacts: they strongly advocate a 1.5 °C maximum temperature increase (IIED, 2014).

Pathways Project (DDPP) work on illustrative pathways for the transition to a low-carbon economy. In their scenarios, teams from developing countries such as India (Mathur et al., 2014), South Africa (Trollip et al., 2014) and Indonesia (Siagian et al., 2014) emphasize the need for poverty alleviation as the highest priority. This objective is translated in each of these national energy scenarios into a 100% access to modern energy in the next decades.

Given the service life of infrastructure and facilities, it is essential that all the resources devoted to alleviating poverty should include a dual carbon and climate constraint. In other words, just as the battle against climate change can only be stepped up if it makes allowance for the imperatives of development and alleviating poverty, so development strategies must integrate a decarbonized approach and adaptation to climate-change impacts. It is consequently legitimate that international climate negotiations should provide a concrete response, in particular on funding mechanisms, to enable and extend efforts to alleviate poverty, while integrating the climate constraint in the adaptation and mitigation branches.

This in turn prompts the need for mechanisms which would drive policies simultaneously targeting poverty alleviation, climate adaptation and/or mitigation. Our paper seeks to demonstrate the relevance of a Poverty-Adaptation-Mitigation Window (PAM-W) that would be implemented within the Green Climate Fund and presents its main features. In the first part of the paper we assess the way existing funding sources and climate funds have allowed for this dimension, and we highlight the limitations of these approaches. After describing the Green Climate Fund, the second part draws on the above appraisal to propose a specific funding window for poverty, adaptation and mitigation, in such a way as to target poverty alleviation while making allowance for the climate constraint.

I. The limits of current climate funds in addressing poverty

Fankhauser and Schmidt-Traub (2010) estimate that for Africa to achieve the Millennium Development Goals in a climate-resilient manner, it would need 40% more external funding

than it would simply to achieve the original goals. This would mean about \$100 billion per year in 2010-20, compared to \$72 billion a year to attain the MDGs².

Since they were launched the existing multilateral climate funds³ have collected \$3 billion for adaptation, a little over twice as much, \$6.5 billion, for mitigation excluding REDD⁴ (the Clean Technology Fund alone represents \$4.6 billion), and \$4.6 billion for REDD mechanisms (see Table 1).

Table 1: Main international climate funds

Funds	Disbursements (M\$) up to 2013	Administered by	Focus	Implementation date
Main adaptation funds				
Adaptation Fund	406	Adaptation Fund Board	Adaptation	2009
Adaptation for Smallholder Agriculture Program	300	The International Fund for Agricultural Development (IFAD)	Adaptation	2012
Least Developed Countries Fund	903	The Global Environment Facility (GEF)	Adaptation	2002
Special Climate Change Fund	336	The Global Environment Facility (GEF)	Adaptation	2002
Pilot Program for Climate Resilience	973	The World Bank	Adaptation	2008
Total	2919			
Main mitigation funds				
Clean Technology Fund	4599	The World Bank	Mitigation	2008
Global Energy Efficiency and Renewable Energy Fund	169	The European Commission	Mitigation	2008
Scaling-Up Renewable Energy Program for Low Income Countries	506	The World Bank	Mitigation	2009
GEF Trust Fund – Climate Change focal area (GEF 4)	1083	The Global Environment Facility (GEF)	Adaptation, Mitigation	2006

² The usual estimates of the cost of achieving the MDGs (UN Millennium project, 2005; Bourguignon et al, 2008; Ban et al, 2008; Jones et al, 2003) do not include the additional cost of adaptation and the need to cope with a hostile climate.

³ In this part we disregard the Green Climate Fund, currently being operationalized and slated ultimately to become the main climate fund. It will be addressed in the second part.

⁴ REDD stands for Reducing Emissions from Deforestation and Forest Degradation

GEF Trust Fund – Climate Change focal area (GEF 6)	192	The Global Environment Facility (GEF)	Adaptation, Mitigation	2006
Total	6543			
Main REDD+ funds				
UN-REDD	251		Mitigation – REDD	2009
Norway's International Climate and Forest Initiative	1607	UNDP	Mitigation – REDD	2008
Forest Investment Program (FIP)	599	The World Bank	Mitigation – REDD	The World Bank
Forest Carbon Partnership Facility - Readiness Fund (FCPF-RF)	355	The World Bank	Mitigation – REDD	2008
Forest Carbon Partnership Facility - Carbon Fund (FCPF-CF)	388	The World Bank	Mitigation – REDD	2008
Congo Basin Forest Fund (CBFF)	186	African Development Bank		
Australia's International Forest Carbon Initiative	216			
Amazon Fund	1033	Brazilian Development Bank (BNDES)		2009
Total	4637			

Predictably these funds fall far short of what is needed to keep global warming below the 2°C limit and provide vulnerable countries with the capacity to adapt. Which is why, following the Copenhagen Accord, the industrialized countries set a target of raising \$100 billion a year up to 2020, in order to support mitigation and adaptation actions in developing countries.

Looking beyond these figures we need to examine more closely how combating poverty has so far been integrated into existing climate funds.

1. How much goes to the poor in the share-out of existing funds?

a) Adaptation

There is no single methodology for the resource allocation of existing adaptation funds (Klein and Möhner, 2011).

Several vulnerability indicators have nevertheless been proposed in the literature to ensure that adaptation funding targets the countries most exposed to the impacts of climate change (Barr et al, 2010; Buys et al, 2009; Füssel, 2010; Wheeler, 2011). But the rankings of countries yielded by the various indicators are very divergent (Persson and Remling, 2014).

Nakhooda et al. (2014) use the global adaptation index GAIN⁵ to show that the countries receiving the most funding for adaptation⁶ are indeed among those most exposed to climate-change impacts. Meanwhile, Stadelmann et al. (2013), or Persson and Remling (2014) show that the Adaptation Fund has targeted a small number of countries with both a low degree of vulnerability and high per-capita income.

Some authors are wary of how well aggregate indicators reflect the specific needs of countries, given the diversity of adaptive needs (Klein and Persson, 2008). Some actions are designed to cope with the direct impacts of climate change, whereas others relate to reducing vulnerability arising out of poverty and its associated ills (informal housing, shanty towns, use of non-commercial energy sources, lack of sanitation, etc.). So it seems necessary to use indicators that are more sector-based, reflecting the reality on the ground more accurately (Füssel, 2010), or indeed mechanisms specific to each type of vulnerability (Hallegatte, 2011), in order to make combating poverty a strategic priority for adaptation.

b) Mitigation

Nakhooda et al. (2014) show that the bulk of funding for mitigation has gone to countries which either have a high level of greenhouse-gas emissions or are registering rapid growth in this respect. Ten countries received 74% of funding: Mexico and Morocco each received more than \$500 million, followed by South Africa, India and Indonesia. The Clean Technology

⁵ The Notre Dame Global Adaptation Index (GAIN) comprises a vulnerability index for water, food, health, housing, ecosystem and infrastructure regarding exposure to climate risks, and a readiness index describing the capacity of a country to make use of financial resources for adaptation. See <http://index.gain.org>

⁶ By order of funding: Bangladesh, Niger, Mozambique, Zambia, Cambodia, Nepal, Tajikistan, Samoa, Bolivia and Yemen.

Fund plays a predominant role here, accounting for about 70% of all mitigation funding. Little climate-change mitigation funding has gone to the least developed countries, with a total of \$203 million being allocated to mitigation (including REDD) in sub-Saharan Africa (Nakhooda et al, 2011). These conclusions are reminiscent of the Clean Development Mechanism's lopsided geographical distribution, with projects concentrated in China, India and Mexico (Dechezlepretre et al, 2008; Winkelmann and Moore, 2011), whereas only 3% of the emission-reduction credits were generated in Africa (Röttgers and Grote, 2014).

These observations reveal the climate-centred side of international negotiations and the resulting funding mechanisms. Mitigation-assessment indicators in flexibility mechanisms hinge on the tonnes of CO₂eq reduction generated. In project mechanisms the tonnes of CO₂eq reductions are calculated in relation to a baseline scenario (Gillenwater, 2012). This approach complicates funding of low-carbon projects by climate funds in the case of development and poverty-reduction projects with a very low level of energy services in the baseline scenario.

In the least developed countries, for example, the rate of electrification is low. If the current figure was taken as the baseline scenario, it would be difficult to find much scope for cutting emissions as electrification progresses, even if generating the additional electricity entails limited carbon emissions. It would of course be possible to adopt a methodology developed under the CDM to make allowance for suppressed demand. The baseline used in this case is the minimum service level for energy, even if it has not yet been reached (UNFCCC, 2014). But even here, the emissions abatement achieved by a low-carbon electrification project is likely to be very slight, when set against the baseline scenario.

So there is good cause to ask whether the 'tonnes of CO₂eq reduction' indicator is suitable for assessing 'low-carbon development' actions.

This review of existing climate funds suggests that to guarantee funding for adaptation and mitigation actions in the context of poverty, fresh thought is needed about the indicators used to select and assess projects and policies for funding. Otherwise the scarcity of available resources is likely to leave the poorest populations on the sidelines of climate funding.

2. Phase out project-based approaches in favour of more ambitious strategies

In recent years a vast body of literature has questioned the merits of project-based approaches for funding climate actions.

The limitations of a project-based mechanism such as the CDM with regard to its structuring effects are all too apparent. Authors have consequently put the accent on sector-based approaches (Samaniego and Figueres, 2002) or even proposed funding to support the deployment of SD-PAMs (Winkler et al, 2002).

Firstly, having a large number of small projects entails high transaction costs (Ahonen and Hämekoski, 2005; Michaelowa et al, 2003 ; Michaelowa and Jotzo, 2005) which jeopardize the overall efficiency of funding. Africa is a particularly sensitive area in this respect, with the average adaptation project amounting to \$4 million, rising to \$17 million for mitigation. Out of all the 483 projects funded by one of the existing climate funds, only nine amounted to more than \$50 million (Afful-Koomson, 2014).

Secondly a host of small schemes will not trigger the paradigm shift required to put these countries on climate-change-resilient, low-carbon pathways. Regarding adaptation, the project-based approach seems better suited to funding actions addressing the direct impacts of climate change, which would not otherwise be carried out (building a dyke for example). In contrast, for adaptation needs related to development and poverty issues, adaptation strategies can be integrated into development strategies, making it more difficult to evaluate the additional cost that would determine the financial support in the case of a project-based approach.

3. Make programmes attractive to private investors

One essential issue is to redirect public and private investment to actions compatible with development pathways integrating climate-change constraints (Hourcade et al, 2009), or quite simply to attract private investors, currently deterred by inadequate institutional capacity or serious political instability. To this end, goals must be made more consistent and get solid backing at national level. Guivarch and Mathy (2012) have shown that in India institutional shortcomings and cross subsidies for electricity tariffs, set up in the name of the right of access to electricity, constitute a major hindrance to broadening access to power. In this context tariff reform, combined with a large scale energy-efficiency drive and support

for renewable energies (by feed-in tariffs, for example), would substantially improve the financial situation of the energy sector, make various low-carbon investments profitable, and broaden access to energy. Support for rolling out such policies may make it easier to mobilize the private sector, at least in some countries and regions (Bhaghat, 2012). The task may be more difficult elsewhere. In Africa, private funding only accounted for \$5 million, out of the existing climate funds which raised a total of \$3.5 billion (allocated but not paid) between 2003 and 2013. To remedy this situation Afful-Koomson (2014) stresses the need to enhance the ability of African countries to set up funding bodies and business models which secure funding by private investors, with the guarantee of lower risks and adequate rates of return. Having said that, over and above the need to mobilize the private sector, it is also necessary to encourage co-funding drawing on official development assistance, public domestic funds and climate funds.

So, existing climate funds are ill suited to fostering the necessary synergies between poverty reduction, adaptation and mitigation. In the second part of this paper we propose setting up a poverty-adaptation-mitigation window as part of the Green Climate Fund. This would overcome the obstacles discussed above and contribute to building synergies.

II. For the creation of a poverty-adaptation-mitigation funding window as part of the Green Climate Fund

In the following we shall describe the modalities for making the as yet not fully defined Green Climate Fund operational, then show how a poverty-adaptation-mitigation funding window (PAM-W) could fit into this framework.

1. Features of the Green Climate Fund

The Green Climate Fund originated in the Copenhagen Accord in 2009. The following year the Cancun Conference endorsed its creation. The fund aims to promote a paradigm shift to low-carbon, climate-change-resilient development pathways. It is set to become the world's main climate fund (GCF, 2011, §32) and thus one of the prime channels for delivering the \$100 billion a year promised by the industrialized nations at Copenhagen. These funds would be allocated to developing countries, from 2020 onwards, for adaptation, emissions abatement (including REDD+), development, technology transfer, and capacity building. By

the end of 2014 the fund had collected \$14.4 billion and it should be in a position to fund its first actions during the second half of 2015. Resources should be equally divided between adaptation and mitigation, but the timeframe governed by this rule has yet to be determined. A Private Sector Facility (PSF) has been set up to encourage private participation, but the facility's share in the GCF has not been settled⁷. Other thematic funding windows could be established in the future (GCF, 2014a). Achieving a balanced share-out, in geographical terms, is also a priority, with among others, the goal of not sidelining the least developed countries. This is a sensitive issue. At the sixth meeting of the GCF Board China and India opposed an initial proposal to place a 5% cap on funds allocated to any one country. The question of setting a minimum funding rate dedicated to the least developed countries was also raised.

a) Country ownership of actions and modalities of access

To encourage countries to appropriate projects, the fund will only finance actions in countries which do not object to them (GCF, 2014b). The fund provides for direct access through national, sub-national or regional bodies in addition to international access through international funding agencies and to access through the PSF for local and private financial intermediaries (GCF, 2014c):

These two points – the no-objection procedure and direct access – are two key components for ensuring that developing countries keep control over actions and funding bodies do not dictate their own conditions or programmes, as may have happened in the past (Nakhooda et al, 2014). However direct access assumes that national bodies in each country are accredited, which is not currently the case, although their number has substantially increased in recent years, with for example the Bangladeshi Climate Change Resilience Fund, the Brazilian Amazon Fund or the Ethiopian Climate Resilient Green Economy Facility.

b) Measuring performance

A results-management framework has been developed, underpinned by performance-measurement matrices, thanks to which the impact, effectiveness and efficiency of funding will be assessed. For mitigation the main impact metric is GHG emissions reduction (in tCO₂eq), which again raises the question of this indicator's relevance for assessing the

⁷ The financial weight, or even the existence, of the Private Sector Facility is open to controversy, some developing countries seeing it as a way for industrialized countries to dodge their funding commitments.

performance of some low-carbon development projects, as discussed above. As for adaptation, the number of beneficiaries is the main impact metric.

c) Selecting actions

Six selection criteria have been set, without any indication of their relative weights (GCF, 2014d): the impact potential relative to the sustainable development and climate objectives of the Fund; the paradigm shift potential toward low-carbon and climate-resilient pathways; the financing needs of the beneficiary country; the capacity of the beneficiary country to implement policies; the economic efficiency of the funds delivered; financial viability (for revenue-generating activities).

The indicators to be used for each of these criteria have yet to be decided. For mitigation, if the first criterion is assessed on the basis of emissions reductions (in tCO₂eq) compared with a baseline scenario, it will run into the problems discussed above with regard to low-carbon development projects in which a baseline scenario contains few GHG emissions. In the case of adaptation, if the indicator is the number of beneficiaries, that may be consistent with poverty-reduction goals. As for the third criterion, bearing in mind the first part of our paper, it would jeopardize the poorest countries to select an aggregate indicator, as it would give a poor reflection of real conditions in the country, in particular the degree of satisfaction of the basic needs of a large share of the population.

2. Suggested features of the PAM-W

The Green Climate Fund has not provided for a specific facility for simultaneously targeting the triple issue of poverty, adaptation and mitigation. The only features are scope for putting a X% cap on the share of GCF resources allocated to any one country (e.g. 5%) or indeed directing X% of resources to the least developed countries. In the following we propose to create a special funding window, within the GCF, dedicated to the links between poverty, adaptation and mitigation (PAM-W), supplementing the funding windows for adaptation and mitigation.

a) Building synergies between poverty-reduction, adaptation and mitigation

The proposed mechanism aims to build synergies between poverty-reduction, adaptation and mitigation in such a way as to pool efforts and ensure that infrastructure and facilities developed under the mechanism are both climate-change resilient and contribute to low-

carbon development. This will avoid the need to phase out facilities before the end of their service life because they made little or no allowance for all the adaptation and emissions constraints. Typical actions potentially concerned by such a mechanism would include building homes to reduce the number of people living in slums, and integrating bioclimatic building techniques, suited to changing climate conditions but also entailing low energy consumption and GHG emissions. Examples may be grouped in relation to basic needs as shown in table 2.

Table 2: Sectoral convergence between satisfaction of basic needs, adaptation and mitigation. Examples of possible criteria for setting priorities when allocating PAM-W resources.

	Poverty-reduction goal	GHG-reduction goal	Adaptation goal	Example of action	Eligibility and allocation criteria
Housing	Reduce number of people living in slums	Limit GHG emissions from new housing	Reduce exposure to extreme events	Promote bioclimatic building techniques	Weighting (Number of people in country living in slums, overall population)
Food	Reduce number of people suffering from malnutrition	Limit GHG emissions from agriculture	Reduce vulnerability of agriculture to climate change	Improve agricultural efficiency from farm to fork	Weighting (Number of people in country suffering from malnutrition, overall population)
Electricity	Reduce number of people without electricity	Limit GHG emissions from electricity generation	Contribute to resilience of electricity sector	Develop decarbonized electricity generation and energy efficiency	Weighting (Number of people in country without electricity, overall population)
Waste	Reduce pollution, increase rate of waste processing	Limit GHG emissions from waste	Limit health impacts of badly managed waste in the context of climate change	Waste-gas capture facilities	Weighting (Number of people in country exposed to severe pollution, overall population)
Sanitation	Reduce number of people without sanitation	Limit GHG emissions from effluents	Limit exposure to flooding and/or epidemics (extreme events)	Develop efficient or improved sewerage networks	Weighting (Number of people in country without sanitation, overall population)

Transport	Broaden access to mobility and improve public health in cities	Limit GHG emissions from vehicles	Build climate-resilient infrastructure	Public transport networks, soft mobility modes	Weighting (Number of people in country without access to enhanced mobility, overall population)
Health	Improve public health and broaden access to treatment	-	Limit exposure to epidemics and extreme events	Increase rate of healthcare coverage	Weighting (Number of people in country without access to healthcare, overall population)

b) Criteria reflecting satisfaction of basic needs for allocation and assessment

Under the PAM-W, allocation would target countries which fall far short of satisfying basic needs. To this end we propose to select sector-based, national criteria, specific to each need. This responds in part to the objections raised by Füssel (2010), and Klein and Möhner (2011) regarding the limitations inherent in defining a single aggregate vulnerability indicator. Several separate indicators may be more suitable, making it possible to define a set of diverse situations more accurately.

In order to avoid allocating a large share of funding to a few highly populated countries (for example, a quarter of the population of India [400 million people] have no access to electricity; at the same time some countries in sub-Saharan Africa have only very limited access to modern energy sources, but have a smaller overall population) the fund allocation criterion should weight the degree of failure to satisfy a basic need for each sector and the overall population.

The goal of the PAM-W, and consequently of its ex post assessment criterion, is to maximize the number of people for whom a basic need will be satisfied, subject to the conditions of PAM-W eligibility, in other words making allowance for adaptation and/or low-carbon development concerns.

Resorting to this sort of criteria answers the concern of developing countries that priority should be given to combating poverty. The other merit of these criteria is that they are complementary (Stadelmann et al, 2013) for assessing the equity with which resources are allocated but also the efficiency of an action, in the sense that it effectively reduces the symptoms of poverty.

c) Levels of aid

The levels of aid provided by funding will be determined by a sector-based approach to each type of basic need, in order to establish international benchmarks. The first step would be to determine the cost of satisfying these basic needs for each sector: per capita cost of access to electricity, to improved sanitation, to waste management, and so on. The Camdessus report (2003) estimated that providing 19 million people living in rural areas of Africa with access to drinking water and a sewage network would cost \$1.4 billion a year from 2003 to 2010. If this estimate was selected for all the countries, then for each additional person gaining access to these services, a country would receive \$74 wholly or in part. Similarly, according to the International Energy Agency (2011, p.3), “to provide universal modern energy access by 2030 annual average investment needs to average \$48 billion per year, more than five times the level of 2009”. The same report asserts that electrification alone would require an investment of between \$550 and \$740 per person, depending on the type of access (on-grid, mini-grid or off-grid). Returns on experience from the existing climate funds and the Clean Development Mechanism also enable us to estimate the surplus cost entailed by carbon-free technology.

The share of this cost covered by the PAM-W would depend on several factors:

- i) The overall envelope allocated to the funding window;
- ii) For projects including mitigation, the level of aid should be sufficient, over and above other funding and aid, to take charge of any excess cost arising out of the use of carbon-free or low-carbon technology ;
- iii) For projects including adaptation, the PAM-W would cover all or part of funding, depending on whether climate change is the main reason for the action, or one among several;
- iv) The aid ratios for the adaptation branch and the mitigation branch will be added up.

By adopting this approach the mitigation branch would no longer need to debate baseline scenarios and would limit transaction costs. The negotiations to set the ratios are nevertheless likely to be difficult. They should be carried out in consultation with developing

countries and will entail adapting all the ratios to reflect the specific conditions in each country.

d) Payments based on results

Scope for the PAM-W being partly supported by results-based payments should be investigated, in particular with a view to direct access to funding by a national entity⁸. The aim of this approach is to make payment of all or part of funding conditional on achieving targets. For this purpose a framework for assessing and monitoring results will need to be deployed, underpinning an array of appropriate performance indicators (GCF, 2011, §58). This type of aid has already been envisaged for REDD activities under the GCF. It has already been experimented by the World Bank, but on a limited project scale, and by the Energy+ partnership. Similar proposals have been made for the GCF (Müller, 2013; Michaelowa and Hoch, 2013). Instruments of this sort are an additional incentive for achieving goals (Eichler and Levine, 2009; Mumssen et al., 2010).

As in the Green Climate Fund modalities aiming at enhancing ownership of actions, the PAM-W would have no mandate to discuss a country's specific strategy for carrying out actions and helping to improve the standard of living of its population, this being a matter of national sovereignty. Only results would be observed. The revenue contributed by the PAM-W and covered by an ex post guarantee could be used to leverage project funding.

e) Modalities of support and country ownership of actions

The PAM-W will be able to fund, without distinction, a subsidy on the total value of infrastructure investments, a subsidy on usage costs (funding of a feed-in tariff scheme such as the one proposed by Michaelowa and Hoch (2013), for example) or other types of aid. Similarly countries must be free to decide how actions should be funded: out of their own assets, through private domestic or foreign investment, or from development aid. In view of the huge amount of funding required to cope with the challenges of adaptation and mitigation in developing countries, and the likelihood of only limited financial resources being available under the GCF, the modalities of support for these countries must limit as far as possible any windfall effects. As investigated by Khan and Schinn (2013), or Michaelowa and Hoch (2013), specific financial-support modalities will be applied as a function of each

⁸ The GCF mentions the option of results-based funding (GCF, 2011, §59; GCF, 2014e).

country's national income (based on the typology used by the World Bank) (see Table 3). Additional conditions may be set to demonstrate that a country is seriously committed to the paradigm shift which the GCF must entail, and/or regarding the need for co-funding, in particular from private sources, for lower and upper middle-income countries. For low-income countries, co-funding by public development aid, or conventional public or private funding will be needed. Moreover setting such conditions will favour country ownership of actions, as well as increase scope for direct access to PAM-W funding.

Table 3: modalities of PAM-W support depending on a country's category

	Small-island states	Low-income countries	Lower middle-income countries	Upper middle-income countries
Mitigation	Donations	Donations	Concessional loans & donations (30%)	Concessional loans
Adaptation	Donations	Donations	Donations	Concessional loans

III. Conclusion

Existing climate funds have difficulty providing a suitable response to the specific demands of the poorest populations with regard to climate-change adaptation and mitigation. To fill the gap this article proposes setting up a specific funding window for poverty, adaptation and mitigation as part of the Green Climate Fund.

One of the key features of the PAM-W is that it bases the criteria for selecting and assessing actions to be funded on the satisfaction of sectoral basic needs and their change after completion of the actions. By setting a level of aid proportionate to the number of beneficiaries, the mechanism avoids the need to discuss baseline scenarios, thus limiting transaction costs. The talks to decide the level of aid and funding modalities will certainly be very difficult. Defining "access to basic needs" and monitoring results may also raise methodological issues, but it is important that they do not dramatically raise transaction costs. An assessment of the overall amount of financial needs for the PAM-W to be consistent with SDGs is also needed. Additional research on these topics will be driven.

The principle of the right to development is central to this proposition, in that it targets the satisfaction of populations' basic needs. It defines a country continuum, given that there are poor people everywhere; all developing countries are therefore eligible with a mechanism of this sort, subject to funding modalities dependent on their income level.

Lastly the PAM-W responds, at least in part, to the demands of developing countries, for whom eradicating poverty is the prime objective. As such it could contribute to overcoming some of the obstacles holding up talks in international climate negotiations. In the run-up to the next round of negotiations at COP 21 in Paris, the PAM-W could spur developing countries to integrate more ambitious emissions limitations pledges into their Intended Nationally Determined Contributions. This could in turn entice industrialized countries to act similarly. In the end, it could pave the way to an ambitious climate agreement.

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